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PATENT

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January 8, 2003
Antony J. Halo 1-8-03
SIGNATURE DATE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Gilbert M. Aust et al.
Serial No. : 09/707,445
Filing Date : November 6, 2000
For : SURGICAL INSTRUMENT
Group Art Unit : 3731
Examiner : Michael H. Thaler
Attorney Docket No. : A31-2047RE

BOX AF

Assistant Commissioner for Patents
Washington, D.C. 20231

RESPONSE

Sir:

In response to the Office Action dated October 8, 2002,
please reconsider the above-identified application in view of
the following remarks. Allowance of claims 1, 2, and 4 is
noted.

It is respectfully submitted that claims 3, 5-7 and 10-11
are allowable. Specifically, claim 3 recites a surgical
instrument including a hollow rigid stem section extending
from a handle and a cutting tool. The cutting tool includes a
rotatable cutter. A hollow articulated section is connected
with the cutting tool and the stem section. A rotatable drive
shaft is connected with the cutter and disposed in and

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section. The drive shaft includes a rigid section disposed in the stem section and a flexible section disposed in the articulated section. The instrument further includes actuator means connected with the handle for bending the articulated section and the flexible section of the drive shaft to change the orientation of the cutter relative to tissue from a first orientation to a second orientation. The drive shaft is rotatable relative to the articulated section when the cutter is in the first orientation and when the cutter is in the second orientation. The surgical instrument includes passage means extending axially through the drive shaft for conducting tissue from a location adjacent to the cutter through the articulated section and the stem section toward the handle. None of the prior art discloses or suggests a surgical instrument as set forth in claim 3.

U.S. Patent No. 5,285,795 to Ryan et al. discloses a discectomy system 20 with a bendable probe 22 and a steerable cannula 24. The probe 22 includes a probe needle 28 extending from a probe body 26. The probe needle 28 has a tubular cutting member 40 with a central bore 48 that reciprocates in an outer housing 52. The cutting member 40 is spaced from the inner cylindrical wall 54 of the housing 52 to define an annular passage 58 through which irrigation fluid flows from the body 26 to the cutting member 40. Tissue is aspirated through the central bore 48 of the cutting member 40. The housing 52 has a bendable tubular section 78 made of an elastic material. The cutting member 40 includes a tubular bendable section 86 located adjacent the section 78 of the

housing 52. Tissue is aspirated through a central bore in the bendable section 86. The cannula 24 has a bendable section 102 and an end 104. Tethers 94 and 96 are secured to the end 104 and extend along the outside of the bendable section 102 and through passages 106 and 108 in a rigid body 98 of the cannula 24. The turning of knobs 110 and 112 on a handle 114 of the cannula 24 causes the tethers 94 and 96 to be pulled to bend the bendable section 102. The bendable portions of the probe and cannula could be comprised of tightly wound steel wires as shown in U.S. Patent Application Serial No. 07/625,832, filed Dec. 11, 1990 and entitled "Percutaneous Surgical System with Rotary Cutting Blade".

The cannula 24 is positioned in the body of a patient and steered and positioned relative to a herniated disc. After the cannula 24 is positioned, the probe 22 is inserted through the cannula to cut tissue. The probe 22 is then drawn out of the cannula 24 and the cannula is repositioned using the tethers 94 and 96. After the cannula 24 is repositioned, the probe 22 is reextended through the cannula to sever tissue, see column 2, line 54 to column 3, line 4.

The Ryan et al. patent does not disclose or suggest a rotatable cutter and a rotatable drive shaft connected with the cutter and disposed in and extending axially through a stem section and an articulated section. The Ryan et al. patent states that the bendable portions of the probe 22 and cannula 24 could be comprised of tightly wound steel wires as shown in U.S. Patent Application Serial NO. 07/625,832 filed Dec. 11, 1990 and entitled "Percutaneous Surgical System with

Rotary Cutting Blade". The Ryan et al. patent does not disclose or suggest how the surgical system with the rotary cutting blade is constructed. Accordingly, the Ryan et al. patent does not disclose or suggest replacing the reciprocating cutter 40 and the bendable section 86 of the cutter with a rotatable cutter and a rotatable drive shaft disposed in and extending axially through a stem section and an articulated section.

The Ryan et al. patent discloses a steerable cannula 24 and a probe 22. The cannula 24 is positioned in the body by pulling on tethers 94 and 96. After the cannula 24 is positioned, the probe 22 is inserted through the cannula. The probe 22 is removed from the cannula 24 to reposition the cannula. The probe 22 is reinserted into the cannula 24 after the cannula has been repositioned. Accordingly, the tethers 94 and 96 are not pulled on to bend the bendable section 86 of the cutter 40. Therefore, the Ryan et al. patent does not disclose or suggest actuator means connected with a handle for bending an articulated section and a flexible section of a drive shaft to change the orientation of a cutter relative to tissue from a first orientation to a second orientation. The Office Action states that the discectomy system 20 disclosed in the Ryan et al. patent is inherently capable of being used by first inserting the probe 22 into the cannula 24 and then using knobs 110 and 112 to bend the cannula with the probe therein. It is respectfully submitted that the discectomy system 20 disclosed in the Ryan et al. patent is not inherently capable of being

used by first inserting the probe 22 into the cannula 24 and then bending the cannula and the probe therein. The Ryan et al. patent specifically teaches removing the probe 22 from the cannula 24 to position the cannula within the body. Accordingly, the actuator mechanism for bending the cannula 24 must not be operable to bend the cannula with the probe 22 therein. Thus, the discectomy system 20 disclosed in the Ryan et al. patent is not inherently capable of being used by first inserting the probe 22 into the cannula 24 and then bending the cannula and the probe therein. The Office Action also states that it would have been obvious to bend the cannula 24 and the probe 22 therein with the knobs 110 and 112 to fine tune the orientation of the probe in the body if the cannula and probe were not initially oriented perfectly in the body. It appears the Examiner is using the teachings of the present invention to find claim 3 unpatentable. The use of hindsight is impermissible.

"The court must be ever alert not to read obviousness into an invention on the basis of applicant's own teachings. The issue, then, is whether the teachings of the prior art would, in and of themselves and without the benefits of appellant's disclosure, make the invention as a whole obvious." In Re Sponnoble, 160 USPQ 237 at 243 (CCPA 1969) (emphasis in original).

Accordingly, the Examiner must consider only the teachings of the prior art references. The Ryan et al. patent does not disclose or suggest actuator means connected with a handle for bending an articulated section and a flexible section of a drive shaft.

The Ryan et al. patent states that the bendable portions of the probe 22 and cannula 24 could be comprised of tightly

wound steel wires as shown in U.S. Patent Application Serial No. 07/625,832 filed Dec. 11, 1990 and entitled "Percutaneous Surgical System with Rotary Cutting Blade". If the bendable portion 86 of the cutter 40 disclosed in the Ryan et al. patent is replaced with tightly wound steel wires as suggested in the Office Action, the resulting discectomy system 20 would not include passage means extending axially through a drive shaft. The tightly wound steel wires of the drive shaft would allow aspirated tissue to pass between the steel wires. Therefore, the Ryan et al. patent does not disclose or suggest a surgical instrument including passage means extending axially through a drive shaft for conducting tissue from a location adjacent to a cutter through an articulated section and a stem section toward a handle. Thus, claim 3 is allowable.

Claim 5 recites a surgical instrument including a rotatable cutter and a rotatable drive shaft disposed in and extending axially through a stem section and an articulated section. An actuator means connected with a handle bends the articulated section and a flexible section of the drive shaft to change the orientation of the cutter. The surgical instrument further includes passage means extending axially through the drive shaft for conducting irrigating fluid from the handle to the cutter. As discussed above, the Ryan et al. patent does not disclose or suggest a rotatable cutter and a rotatable drive shaft disposed in and extending axially through a stem section and an articulated section. Also, the Ryan et al. patent does not disclose or suggest an actuator

means connected with a handle for bending an articulated section and a flexible section of a drive shaft to change the orientation of a cutter. The Ryan et al. patent discloses knobs 110 and 112 for pulling tethers 94 and 96 to bend a cannula 24 when a probe 22 is not inserted in the cannula. As discussed above, the discectomy system 20 disclosed in the Ryan et al. patent does not inherently include actuator means for bending an articulated section and a flexible section of a drive shaft. Also, as discussed above, it would not be obvious to bend the cannula 24 of the Ryan et al. patent with the probe 22 therein. Furthermore, the Ryan et al. patent does not disclose or suggest passage means extending axially through a drive shaft for conducting irrigating fluid from a handle to a cutter. The Ryan et al. patent discloses an annular passage 58 defined by an outer surface of a cutter 40 for conducting irrigating fluid from a handle to a cutter. Furthermore, if the bendable portion 86 of the cutter 40 disclosed in the Ryan et al. patent is replaced with tightly wound steel wires as suggested in the Office Action, the resulting discectomy system 20 would not include passage means extending axially through a drive shaft. The tightly wound steel wires of the drive shaft would allow aspirated tissue and/or irrigating fluid to leak through the steel wires. Therefore, the Ryan et al. patent does not disclose or suggest a surgical instrument including passage means extending axially through a drive shaft for conducting irrigating fluid from a handle to a cutter. Thus, claim 5 is allowable.

Claim 6 recites a surgical instrument having an actuator means including means for pulling on one of elongated elements to bend an articulated section and a flexible portion of a drive shaft to change the orientation of a movable member. As discussed above, the Ryan et al. patent does not disclose or suggest or inherently include actuator means including means for pulling on one of elongated elements to bend an articulated section and a flexible portion of a drive shaft to change the orientation of a movable member. Also, as discussed above, it would not be obvious to bend the cannula 24 of the Ryan et al. patent with the probe 22 therein. Therefore, claim 6 is allowable.

Claim 7 recites a surgical instrument having an actuator means including means for pulling on one of elongated elements to bend an articulated section and a flexible portion of a drive shaft to change the orientation of a movable member. The surgical instrument further includes passage means extending through the drive shaft to conduct irrigating fluid through the drive shaft from the handle to the movable member. As discussed above, the Ryan et al. patent does not disclose or suggest or inherently include actuator means including means for pulling on one of elongated elements to bend an articulated section and a flexible portion of a drive shaft to change the orientation of a movable member. Also, as discussed above, it would not be obvious to bend the cannula 24 of the Ryan et al. patent with the probe 22 therein. The Ryan et al. patent does not disclose or suggest a surgical instrument including passage means extending

through a drive shaft for conducting irrigating fluid from a handle to a movable member. Therefore, claim 7 is allowable.

Claim 10 recites a surgical instrument having an actuator means connected to a handle for bending an articulated section and a flexible portion of means for moving a portion of a movable member to change the orientation of the movable member. As discussed above, the Ryan et al. patent does not disclose or suggest or inherently include actuator means connected to a handle for bending an articulated section and a flexible portion of means for moving a portion of a movable member to change the orientation of the movable member. Also, as discussed above, it would not be obvious to bend the cannula 24 of the Ryan et al. patent with the probe 22 therein. Therefore, claim 10 is allowable.

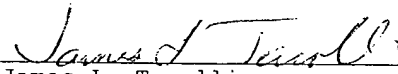
Claim 11 recites a surgical instrument having an actuator means connected to a handle for bending an articulated section and a flexible portion of means for moving a portion of a movable member to change the orientation of the movable member. The surgical instrument further includes passage means for conducting irrigating fluid from a handle to the movable member. The passage means extends axially from the handle through the articulated section and a stem section to the movable member. The passage means extends through the means for moving the portion of the movable member. As discussed above, the Ryan et al. patent does not disclose or suggest or inherently include actuator means connected to a handle for bending an articulated section and a flexible portion of means for moving a portion of a movable member to

change the orientation of the movable member. Also, as discussed above, it would not be obvious to bend the cannula 24 of the Ryan et al. patent with the probe 22 therein. Also, the Ryan et al. patent does not disclose or suggest passage means for conducting irrigating fluid from a handle to a movable member extending axially from a handle through an articulated section and a stem section to a movable member and through means for moving a portion of the movable member. The Ryan et al. patent discloses an annular passage 58 defined by an outer surface of the bendable section 86 of the cutter 40 for conducting irrigating fluid to the cutter 40. Therefore, claim 11 is allowable.

In view of the foregoing, it is respectfully submitted that the above-identified application is in condition for allowance, and allowance of the above-identified application is respectfully requested.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,


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